

A New *Euphorbia* (Euphorbiaceae) from Hawaii¹

DERRAL HERBST²

ABOUT 60 TAXA of *Euphorbia* are considered to be endemic to the Hawaiian Islands. All have been designated as members of the genus *Chamaesyce* or subgenus *Chamaesyce* depending upon the opinion of the writer and, according to Fosberg (1948), probably have evolved from a single ancestral immigrant of Indo-Pacific affinities. The species described below is significant in that it is not in the *Chamaesyce* group and thus probably would represent a separate introduction. At present it is known from two localities in northwest Kauai: a single tree in Haeleele Valley and a grove of about 150 trees in Mahanaloa Valley (S. L. Montgomery, personal communication).

I thank Dr. L. E. Bishop for preparing the Latin diagnosis and Dr. C. H. Lamoureux and Mr. S. H. Sohmer for reading the manuscript.

Euphorbia haeleeleana sp. nov.

Fig. 1

Arbor, ramis crassis succulentis ad apicem obtusis, internodiis ca. 5 mm longis; foliis petiolatis alternis 2/5-ordinatis, stipulis carentibus; laminis ellipticis integris chartaceis, apice obtusis vel retusis, basi obtusis, 12 (7–20) cm longis, 6 (3–8) cm latis, glabris vel interdum basi ipsa hirtellis; petiolis 3.5 (1.5–5) cm longis, glabris vel aliquando hirsutulis; venatione camptodroma; pseudanthia axillari, bractea caduca subtenta, pseudoumbellam terminalem formanti; pedunculo 20 (11–29) mm longo, ca. 2 mm lato, hirsuto; glande pedunculi 1 mm longa, V-formata, infra cyathium 4 (0.5–6) mm sistenti, aliquando absenti; cyathio truncato, 4–5 mm alto, 7–9 mm lato, fundo involucri maturi circum peripheriam abscindenti; glandibus cyathii 9 (8–11) tenuibus atrobrunneis, 1.5–2.5 mm longis et 1 mm latis, subtus dense

hirsutis, in pariem involucri complanatis; staminibus numerosis, filamentis 1 mm longis,

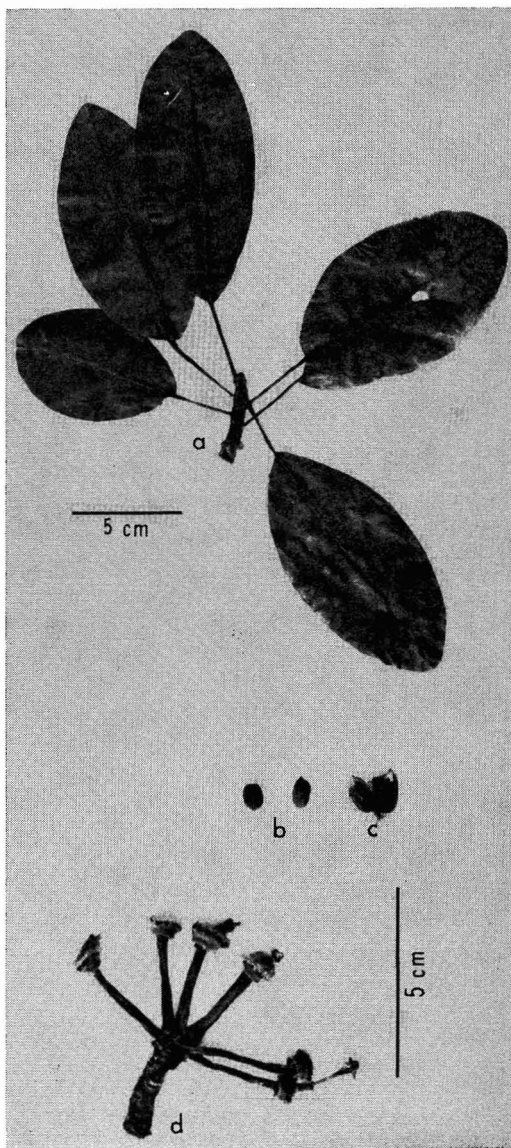


FIG. 1. *Euphorbia haeleeleana* Herbst, holotype. a, branch tip; b, seeds, front and side view shown; c, segment of mature, dehiscent fruit; d, inflorescence.

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² University of Hawaii, Department of Botany, Honolulu, Hawaii 96822. Present address: Pacific Tropical Botanical Garden, P.O. Box 758, Koloa, Kauai, Hawaii 96756.

antheris 0.5 mm longis, bracteolis dense ciliatis ca. 3 mm longis; fructu glabro, 12 (11–14) mm alto, pedicello 3.5 (1–6) mm longo, crasso, erecto vel geniculato, hirsuto; seminibus ovatis atrobrownis, 8 (7–9) mm longis, ca. 5 mm latis, caruncula alba usque ad 1 mm longa.

Tree, reported to be up to 14 meters tall; branches thick, succulent, terminating bluntly at apex, nodes not pronounced, usually about 5 mm apart; branch tips with smooth, orange-brown bark and a thick, waxy cuticle; leaf scars prominent on young branches, 5 mm long and 3 mm wide, elliptic to transverse obovate, pale, with 5 bundle scars; leaves alternate, estipulate, petiolate, with a 2/5 phyllotaxis; petioles 3.5 (1.5–5.25) cm long, stout, dark brown, glabrous or occasionally hirsutulous, trichomes pale; blades 12 (7–20) cm long and 6 (3.25–8.25) cm wide, chartaceous, glabrous or occasionally hirsutulous on both surfaces at extreme proximal end, elliptic, apex obtuse to retuse, margin entire, base obtuse, venation camptodromous, lateral veins, about 45 on a side, arise nearly perpendicular to the midrib and progress in parallel slightly ascending lines forming a reticulum before reaching the margin; pseudanthia axillary, subtended by deciduous bracts 1 mm long, forming a terminal pseudoumbel due to reduction of internodes; peduncles 20 (11–29) mm long and about 2 mm wide, hirsute; peduncular glands 1 mm long, V-shaped, 4 (0.5–6) mm below cyathium or occasionally lacking; cyathium truncate, hirsute, grayish-brown, 7.5 (7–9) mm wide and 4–5 mm high, the base of the mature involucre appearing to abscise around the periphery, glands 9 (8–11) in number, thin, dark brown, sometimes mottled, 1.5–2.5 mm long and 1 mm wide, flattened against the involucre walls, densely hirsute underneath; stamens numerous, filament 1 mm long and 0.25 mm wide, anthers 2-celled, dehiscing longitudinally, 0.5 mm long and 0.5 mm wide, bractlets about 3 mm long, densely ciliate, interstaminal glands about 0.25 mm high and 1 mm long; female flowers

not available for study; fruit globose, glabrous, 12 (11–14) mm in diameter, brown when dry, pedicels 3.5 (1–6) mm long and 2 (1–2.5) mm wide, erect or geniculate, hirsute; seeds ovate, testa dark-brown mottled, 8 (7–9) mm long and about 5 mm wide, raphe continuous along ventral side, caruncle white or cream-colored, to 1 mm long; embryo straight, plumules flat, fleshy, 4.5 mm long (including 0.5 mm lobes of cordate base) and 3.5 mm wide, hypocotyl 2.5 mm long and 1.25 mm wide, endosperm copious. All above statements based upon dried specimens.

Type

Kauai, Na Pali Forest Reserve, Mahanaloa Valley, alt 660 meters. Small tree of 3.5 meters on dry, steep, north-facing slope. Associated with dry-forest trees in an extensive, but localized, grove. Aug. 22, 1970, W. Gagné and S. Montgomery 537 (BISH—holotype, HAW).

Other Specimens Examined

Kauai, Haeleele Valley, upper edge of rock cliff, north-facing slope above stream, alt 615 meters. Tree 14 meters tall; few leaves, no flowers or fruit. Nov. 5, 1970, S. L. Montgomery 20 (BISH).

The tree is distinguished from other species of *Euphorbia* in Hawaii by its alternate leaves, a pseudoumbel of large cyathia, and numerous involucre glands.

Seeds of the type specimen were distributed to the Honolulu Botanic Gardens, Lyon Arboretum, and Pacific Tropical Botanical Garden.

The new epithet denotes one of the areas in which the plant grows.

LITERATURE CITED

- FOSBERG, F. R. 1948. Derivation of the flora of the Hawaiian Islands. In: Elwood C. Zimmerman, *Insects of Hawaii*, vol. 1, pp. 107–119. University of Hawaii Press, Honolulu.